

**AMENDMENTS TO THE CLAIMS**

1. (Currently Amended) A computer-implemented method for modeling a target system, the method comprising:

identifying a first block that represents multiple component models in a block diagram model of a target system;

displaying a user interface in response to a first user action, the first user action indicating a selection of the first block, the user interface including a mechanism that provides the user with the multiple component models;

receiving a user selection that selects a first component model from the multiple component models;

incorporating the first component model into the model of the target system using the first block;

saving the model of the target system that includes the first component model in a memory; and

switching the first block to represent a second component model in response to a second user action indicating a selection of second component model in the user interface, without replacing the first block with a second block representing the second component model.

2. (Canceled)

3. (Previously Presented) The method of claim 1 wherein the component models belong to a category of atmosphere models that include at least a non standard day atmosphere model.

4. (Previously Presented) The method of claim 1 wherein the component models belong to a category of wind turbulence models that include at least a discrete turbulence model.

5. (Previously Presented) The method of claim 1 wherein the component models belong to a category of equations of motion models that include at least one simple variable mass model and at least one custom variable mass model.

6. (Canceled)

7. (Previously Presented) The method of claim 1 wherein component models provided as options of the user interface may be extended by a user.
8. (Previously Presented) The method of claim 1 wherein after the second component model is selected in the user interface, the second component model is incorporated into the model of the target system through the first block.
9. (Previously Presented) The method of claim 1 wherein the first component model has a same configuration of external ports that can be of input or output type as the second component model.
10. (Previously Presented) The method of claim 1 wherein the first component model has a different configuration of external ports that can be of input or output type as the second component model.
11. (Previously Presented) The method of claim 1 wherein the first block represents one of the first component model and the second component model depending on a user's selection of the first component model and the second component model.
12. (Canceled)
13. (Previously Presented) A computer-implemented method for modeling a target system , the method comprising:
  - identifying a first block that represents multiple component models in a block diagram model of a target system;
  - displaying a user interface in response to a user action indicating a selection of the first block, the user interface including a mechanism that provides the user with the multiple component models; and
  - receiving a user selection that selects a first component model from the multiple component models;

incorporating the first component model into the model of the target system using the block;

saving the model of the target system that includes the first component model in a memory;

switching the first block to represent a second component model in response to a user action indicating a selection of the second component model in the user interface; and

incorporating the second component model into the model of the target system by one of  
copying or referring to the second component model in the block,  
conditionally evaluating at least a part of the component model, or  
executing a sequence of modifications to the component model.

14. (Canceled)

15. (Previously Presented) The method of claim 13 wherein the component models belong to a category of atmosphere models that include at least a non standard day atmosphere model.

16. (Previously Presented) The method of claim 13 wherein the component models belong to a category of wind turbulence models that include at least a discrete turbulence model.

17. (Previously Presented) The method of claim 13 wherein the component models belong to a category of equations of motion models that include at least one simple variable mass model and at least one custom variable mass model.

18. (Canceled)

19. (Previously Presented) The method of claim 13 wherein component models provided as options of the user interface may be extended by a user.

20. (Previously Presented) The method of claim 13 wherein after the second component is selected in the user interface, the second component model is incorporated into the model of the target system through the first block.

21. (Previously Presented) The method of claim 13 wherein the first component model has a same configuration of external ports that can be of input or output type as the second component model.
22. (Previously Presented) The method of claim 13 wherein the first component model has a different configuration of external ports that can be of input or output type as the second component model.
23. (Previously Presented) The method of claim 13 wherein the first block represents one of the first component model and the second component model depending on a user's selection of the first component model and the second component model.
24. (Previously Presented) The method of claim 13 wherein the first component model is switched to the second component model without replacing the first block by a second block representing the second component model.
25. (Previously Presented) A computer implemented system for designing a target system in which a planetary environment is one of the factors for designing the target system, the system comprising:
- a model storage for storing and providing models necessary to design the target system, wherein the model storage includes at least two different day atmosphere models, wherein at least one of the two different day atmosphere models is a non-standard day atmosphere model; and
  - a design unit for designing the target system by utilizing the models provided by the model storage.
26. (Original) The system of claim 25 further comprising an execution unit for executing the target system designed in the design unit.
27. (Original) The system of claim 26 wherein the execution unit is realized through a process of automatic code generation from the design unit.

28. (Previously Presented) The system of claim 26, wherein numerical representations of the models including data type, precision and data vectorization of the models are automatically derived from the context of using the models when executing the models.

29. (Original) The system of claim 25 wherein the non-standard day atmosphere model includes a model incorporating a non-standard day atmosphere from one of military standard specifications MIL-HDBK-310 and MIL-STD-210C.

30. (Original) The system of claim 25 wherein the model storage includes standard atmosphere models.

31. (Previously Presented) The system of claim 30 wherein the standard atmosphere model includes a Committee on Extension to the Standard Atmosphere (COESA) atmosphere model.

32. (Original) The system of claim 25 wherein the models provided from the model storage are represented in symbols.

33. (Original) The system of claim 32 wherein the symbols include blocks.

34. (Previously Presented) The system of claim 33 wherein the design unit provides a user interface to enter parameters for each block of the target system in response to an action taken by a user

35. (Previously Presented) The system of claim 34 wherein the user interface is provided in response to a user clicking each block of the target system.

36. (Original) The system of claim 34 wherein the user interface provides an option to select one of the atmosphere models in the model storage.

37. (Previously Presented) The system of claim 36 wherein the atmosphere models in the model storage are provided in the user interface in response to an action taken by a user.

38-72. (Canceled)

73. (Previously Presented) A computer-readable medium holding instructions executable in a computer for the design of a target system, wherein a planetary environment is one of the factors for designing the target system, the instructions comprising:

instructions for providing atmosphere models necessary to design the target system; and  
instructions for incorporating the atmosphere models to the target system,

the atmosphere models including at least one atmosphere model that represents a non-standard day atmosphere.

74. (Previously Presented) The medium of claim 73 further holding instructions for executing behavior of the target system designed.

75. (Original) The medium of claim 73 wherein the atmosphere models are represented by blocks.

76. (Previously Presented) The medium of claim 75 wherein the instructions for incorporating comprise instructions for providing a graphical user interface in response to an action taken by a user.

77. (Original) The medium of claim 76 wherein the graphical user interface is provided in response to users clicking the blocks representing atmospheric models.

78. (Original) The medium of claim 76 wherein the graphical user interface provides an option to change an atmosphere model to another atmosphere model.

79. (Previously Presented) The medium of claim 76 wherein the graphical user interface provides blanks to enter parameters of the atmosphere models to produce outputs of the atmosphere models.

80-96. (Canceled)